

[SPLIT-GATE FLASH MEMORY STRUCTURE AND METHOD OF MANUFACTURE]

Abstract

A split-gate flash memory structure. The flash memory at least includes a substrate having a trench therein, a floating gate, a select gate and a source/drain region. The floating gate is formed inside the trench such that the upper surface of the floating gate is below the substrate surface. The select gate is also formed inside the trench above the floating gate such that the select gate protrudes beyond the substrate surface. The source/drain region is formed in the substrate on each side of the select gate. The source/drain region and the floating gate are separated from each other by a distance. A tunnel oxide layer separates the floating gate from the substrate and a gate dielectric layer separates the floating gate from the select gate. A dielectric layer separates the select gate from the substrate.